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1999 FORD Puma OEM Service and Repair Workshop Manual

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Normal Operation and Fault Conditions

REFER to: Handles, Locks, Latches and Entry Systems - System Operation and Component Description(501-14 Handles, Locks, Latches and Entry Systems, Description and Operation).

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
BCM (body control module) B10AB:00	Remote Keyless Entry Synchronization: No Sub Type Information	Sets when the BCM (body control module) detects the rolling counter received from a RKE (remote keyless entry) transmitter is out of synchronization with the rolling counter stored in the module.
BCM (body control module) B1218:00	Transmitter Identification Code: No Sub Type Information	Sets when the BCM (body control module) detects and invalid Transmitter Identification Code (TIC).

Possible Sources

- Key/key fob battery
- Key
- Key button pressed a substantial amount of times while outside the range of the vehicle
- Key programming
- Network concern

Visual Inspection and Pre-checks

- Inspect the key/key fob for damage.
- Check for aftermarket keys.

NOTE

All customer keys need to be present when diagnosing the RKE (remote keyless entry) system.

NOTE

Using a diagnostic scan tool to compare the BCM (body control module) TIC_xx_BCM (Programmed Transmitter ID Code (TIC) Value x) PID (parameter identification) to the RTM (radio transceiver module) RTM Lst_Xm_ID_Cd (Last Received Transmitter ID Code (TIC)) PID (parameter identification) can be used to verify if a key in question is programmed to the vehicle..

- **NOTE**

  Unlimited Key mode is used when more than 8 keys are required to be programmed to the vehicle. This mode should only be used for Fleet vehicle purposes.

  Using a diagnostic scan tool, access the security feature and determine if the BCM (body control module) is in Unlimited Key mode.
  REFER to: Anti-Theft Key Programming - Scan Tool(419-01C Passive Anti-Theft System (PATS) - Vehicles With: Push Button Start, General Procedures).

Is the BCM (body control module) Unlimited Key mode enabled?

Yes	If this is the desired mode, ERASE and PROGRAM the keys. REFER to: Anti-Theft Key Programming - Scan Tool (419-01C Passive Anti-Theft System (PATS) - Vehicles With: Push Button Start, General Procedures). If this is not the desired mode, DISABLE the Unlimited Key mode. All IKT (integrated keyhead transmitter) keys (up to 4) programmed prior to the BCM (body control module) Unlimited Key mode being enabled have the RKE (remote keyless entry) function restored.

No	GO to O5

O4 CHECK IF THE PASSIVE KEYS START THE VEHICLE

- Place the first key in the backup starting location and attempt to start the vehicle.
  REFER to: Passive Anti-Theft System (PATS) - System Operation and Component Description(419-01C Passive Anti-Theft System (PATS) - Vehicles With: Push Button Start, Description and Operation).
- Ignition OFF.
- Place the second key in the backup starting location and attempt to start the vehicle.

Do both keys start the vehicle?

Yes	GO to O5

Does any RKE (remote keyless entry) function operate?

Yes	GO to Pinpoint Test P

No	GO to O8

O8 CHECK THE NO (TIC) OUT OF SYNC (TIC-NONE_OOS) PID (PARAMETER IDENTIFICATION)

- Ignition ON.
- Using a diagnostic scan tool, view the BCM (body control module) Parameter Identifications (PIDs).
- Using a diagnostic scan tool, monitor the BCM (body control module) PID (parameter identification) TIC-NONE_OOS.

Does the PID (parameter identification) indicate On?

Yes	GO to O13

No	For vehicles equipped with key fob GO to O10 For vehicles equipped with IKT (integrated keyhead transmitter) keys, GO to O9 For vehicles equipped with passive key, GO to O11

O9 RESYNCHRONIZE THE INOPERATIVE KEY BY CYCLING THE IGNITION

- Insert the suspect key into the ignition lock cylinder.
- Ignition ON.
- Wait 10 seconds.
- Ignition OFF.
- Remove the suspect key from the ignition lock cylinder and check the RKE (remote keyless entry) transmitter operation.

Does the suspect key operate correctly now?

Yes	The system is OK. The concern was caused by a key out of synchronization.

No	GO to O12

- Press any button on the operational key.
- Within 30 seconds, press any button on the suspect key.
- Check the suspect key for correct operation.

Does the suspect key operate correctly now?

Yes	The system is OK. The concern was caused by a key out of synchronization.
No	GO to O16

O13 CHECK THE (RKE) REMOTE BATTERY LOW (RKE_BATT_LOW) PID (PARAMETER IDENTIFICATION)

- Using a diagnostic scan tool, view the BCM (body control module) Parameter Identifications (PIDs).
- Using a diagnostic scan tool, monitor the BCM (body control module) PID (parameter identification) RKE_BATT_LOW.

Does the PID (parameter identification) indicate Off?

Yes	GO to O16
No	For an IKT (integrated keyhead transmitter) or key fob , GO to O14 For a passive key, GO to O15

O14 CHECK THE KEY BATTERY

- Ignition OFF.
- **NOTE**

  Do not clean off any grease from the battery terminals on the back surface of the circuit board.

  Remove the key. Refer to the Owner's Literature for battery removal instructions.
- Verify the correct battery is used. Refer to Owner's Literature
- Measure the key battery voltage.

Is the voltage greater than 2.5 volts?

Yes	REPLACE the suspect key. PROGRAM a new IKT (integrated keyhead transmitter) or key. REFER to: Anti-Theft Key Programming - Scan Tool

Does the RKE (remote keyless entry) functionality operate?

Yes	The system is OK. The concern was caused by an unprogrammed key.

No	REPLACE the suspect key. PROGRAM the new key. For vehicles with IKT (integrated keyhead transmitter) or key fob, REFER to: Anti-Theft Key Programming - Scan Tool (419-01C Passive Anti-Theft System (PATS) - Vehicles With: Push Button Start, General Procedures). For vehicles equipped with passive key, REFER to: Anti-Theft Key Programming - Scan Tool (419-01C Passive Anti-Theft System (PATS) - Vehicles With: Push Button Start, General Procedures).

O17 CHECK FOR COMMUNICATION WITH THE BCM (BODY CONTROL MODULE) AND THE RTM (RADIO TRANSCEIVER MODULE)

- Ignition ON.
- Using a diagnostic scan tool, carry out a network test.

Does the BCM (body control module) and the RTM (radio transceiver module) pass the network test?

Yes	GO to O18

No	REFER to: Controller Area Network (CAN) Module Communications Network(418-00A Controller Area Network (CAN) Module Communications Network, Diagnosis and Testing).

O18 CHECK FOR RTM (RADIO TRANSCEIVER MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the RTM (radio transceiver module) module self-test.

Are any Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to the DTC (diagnostic trouble code) Chart in this section.

Yes	GO to P2

No	REFER to the Symptom Chart: Handles, Locks, Latches and Entry Systems - Electrical in this section.

P2 VERIFY THE HORN OPERATION USING THE BCM (BODY CONTROL MODULE) PID (PARAMETER IDENTIFICATION) (HORN_RELAY)

- Ignition ON.
- Using a diagnostic scan tool, view the BCM (body control module) Parameter Identifications (PIDs).
- Select the BCM (body control module) horn PID (parameter identification) (HORN_RELAY) and active command the horn on then off.

Does the horn sound when commanded on?

Yes	GO to P3

No	REFER to: Horn(413-06 Horn, Diagnosis and Testing).

P3 VERIFY THE HAZARD LAMP OPERATION

- Activate the hazard lamp function.

Do the hazard lamps operate correctly?

Yes	GO to P4

No	REFER to: Turn Signal and Hazard Lamps(417-01 Exterior Lighting, Diagnosis and Testing).

P4 VERIFY THE TAILGATE LATCH RELEASE OPERATION

- Ignition ON.
- Unlock the doors using the door lock control switch.
- Press the tailgate release button located at the rear of the vehicle.

Yes	GO to P7

No	REPLACE the suspect key. PROGRAM the new key. For an IKT (integrated keyhead transmitter) or a key fob, REFER to: Anti-Theft Key Programming - Scan Tool (419-01C Passive Anti-Theft System (PATS) - Vehicles With: Push Button Start, General Procedures). For a passive key, REFER to: Anti-Theft Key Programming - Scan Tool (419-01C Passive Anti-Theft System (PATS) - Vehicles With: Push Button Start, General Procedures).

P7 CHECK THE PANIC ALARM/VEHICLE LOCATOR BUTTON

No	GO to Pinpoint Test R

PINPOINT TEST Q : THE RKE (REMOTE KEYLESS ENTRY) TRANSMITTER HAS POOR RANGE PERFORMANCE

Normal Operation and Fault Conditions

REFER to: Handles, Locks, Latches and Entry Systems - System Operation and Component Description(501-14 Handles, Locks, Latches and Entry Systems, Description and Operation).

Possible Sources

- Key/key fob
- Key/key fob battery/batteries
- RKE (remote keyless entry) transmitter (Police)
- Aftermarket system
- Consumer electronic device
- High power devices
- TV/radio transmission towers
- RTM (radio transceiver module)

Visual Inspection and Pre-checks

- Inspect the key/key fob for damage.
- Inspect the key/key fob battery/batteries.
- Inspect for aftermarket RKE (remote keyless entry) systems.

NOTE

At least 2 programmed keys must be present to begin diagnosis of the RKE (remote keyless entry) system.

Q1 CHECK FOR THE CORRECT KEYS

- Check that the correct keys are used with the vehicle. Refer to the PATS (passive anti-theft system) Job Aid in the Service Tips tab on the Professional Technician Society (PTS) web page or the parts catalog.

Are the correct keys present?

Yes	GO to Q2

NOTE

Do not clean off any grease from the battery terminals on the back surface of the circuit board.

- Remove the key battery. Refer to the Owner Literature for battery removal instructions.
- Verify the correct battery is used. Refer to Owner's Literature.
- Measure the key battery voltage.

Is the voltage greater than 2.5 volts?

Yes	REPLACE the suspect key. PROGRAM the new key. REFER to: Anti-Theft Key Programming - Scan Tool (419-01C Passive Anti-Theft System (PATS) - Vehicles With: Push Button Start, General Procedures).

No	REPLACE the key battery (make sure the battery is seated correctly). DO NOT reprogram the key (weak or dead batteries do not erase keys from the BCM (body control module) memory).

Q4 CHECK THE PASSIVE KEY BATTERIES

NOTE

Do not clean off any grease from the battery terminals on the back surface of the circuit board.

- Remove the passive key batteries. Refer to the Owner Literature for battery removal instructions.
- Verify the correct batteries are used. Refer to the Owner Literature
- Measure the key batteries voltage.

Are the voltages greater than 2.5 volts?

Yes	REPLACE the suspect key. PROGRAM the new key. REFER to: Anti-Theft Key Programming - Scan Tool (419-01C Passive Anti-Theft System (PATS) - Vehicles With: Push Button Start, General Procedures).